

We claim:

1. A pharmaceutical composition comprising a tocol as a solvent, and a tocol soluble ion pair comprised of a charged pharmaceutically active compound or a charged precursor of a pharmaceutically active compound, and a compound of opposite charge capable of forming a tocol-soluble ion pair with the pharmaceutically active compound or precursor.
2. A composition according to claim 1 wherein the tocol is a tocopherol or tocotrienol.
3. A composition according to claim 1 wherein the tocol is a tocopherol.
4. A composition according to claim 3 wherein the tocopherol is α -tocopherol.
5. A composition according to claim 3 wherein the tocopherol is β -, γ - or δ -tocopherol.
6. A composition according to claim 1 wherein the tocol is a tocotrienol.
7. A composition according according to claim 1, wherein the tocol is selected from 6-hydroxy, 2,5,7,8-tetramethylchroman-2-carboxylic acid and its desmethyl analogs.
8. A composition according to claim 1 wherein the pharmaceutically active compound or precursor is selected from pharmaceutically active bases, acids, and natural and synthetic polyelectrolytes, and precursors thereof.
9. A composition according to claim 8 wherein the pharmaceutically active compound or precursor is selected from pharmaceutically active carboxylic acids,

polycarboxylic acids, amines, polyamines, peptides, polypeptides, proteins, nucleotides, polynucleotides, saccharides, polysaccharides and charged polyelectrolytes, and precursors thereof.

10. A composition according to claim 9 wherein the pharmaceutically active compound or precursor is selected from pharmaceutically active amines, peptides and polypeptides, and precursors thereof.
11. A composition according to claim 10 wherein the pharmaceutically active compound is a macrolide antibiotic or a precursor thereof.
12. A composition according to claim 11 wherein the macrolide antibiotic is erythromycin or clarithromycin or a precursor thereof.
13. A composition according to claim 11 wherein the pharmaceutically active compound or precursor is an anti-arrhythmic drug or a precursor thereof.
14. A composition according to claim 13 wherein the anti-arrhythmic drug is amiodarone or a precursor thereof.
15. A composition according to claim 10 wherein the pharmaceutically active compound or precursor is an anthracycline antibiotic or a precursor thereof.
16. A composition according to claim 15 wherein the anthracycline antibiotic is doxorubicin, daunorubicin, epirubicin or a derivative thereof, or a precursor thereof.
17. A composition according to claim 10 wherein the pharmaceutically active agent or precursor is mitomycin, bleomycin or an analog thereof, or a precursor thereof.

18. A composition according to claim 10 wherein the pharmaceutically active compound or precursor is vincristine, vinblastine, a nitrogen mustard, nitrosourea, an analog thereof, or a precursor thereof.
19. A composition according to claim 10 wherein the pharmaceutically active compound or precursor is camptothecin, an analog thereof or a precursor thereof .
20. A composition according to claim 19 wherein the pharmaceutically active compound is camptothecin, topotecan, irinotecan, a derivative thereof, or a precursor thereof.
21. A composition according to claim 10 wherein the pharmaceutically active compound or precursor is a quinolone antibiotic or a precursor thereof.
22. A composition according to claim 21 wherein the quinolone antibiotic is ciprofloxacin, clinafloxacin, levofloxacin, moxifloxacin or a precursor thereof.
23. A composition according to claim 10 wherein the pharmaceutically active compound or precursor is a biogenic amine or a precursor thereof.
24. A composition according to claim 23 wherein the biogenic amine is histamine, serotonin, epinephrine, an analog thereof, or a precursor thereof.
25. A composition according to claim 1 in wherein the ion pair forming compound is selected from tocol derivatives, C₂-C₂₅ fatty acids , alkyl phosphates, lipids, phospholipids, retinoids, benzoquinones and esters of Vitamin A, D and K.
26. A composition according to claim 25 wherein the ion pair forming compound is a tocol derivative.

27. A composition according to claim 26 wherein the ion pair forming compound is a charged ester of α -tocopherol.
28. A composition according to claim 27 wherein the charged ester is selected from tocopherol acetate, phosphate, succinate, aspartate, and glutamate and mixtures thereof.
29. A composition according to claim 26 in which the ion pair forming compound is selected from amines of tocopherols and derivatives thereof .
30. A composition according to claim 29 wherein the ion pair forming compound is tocopheramine.
31. A composition according to claim 1 wherein the ion pair forming compound is selected from C_2 - C_{25} carboxylic acids, C_2 - C_{25} amines and mixtures thereof.
32. A composition according to claim 31 wherein the ion pair forming compound is selected from acetic, propionic, butyric, valeric, valproic, caprylic, caproic, lauric, myristic, palmitic, oleic, palmitoleic, stearic, linoleic, linolenic, arachidic and arachidonic acids, and mixtures thereof.
33. A composition according to claim 31 wherein the ion pair forming compound is stearylamine.
34. A composition according to claim 25 wherein the ion pair forming compound is selected from charged lipids, phospholipids, sphingolipids and mixtures thereof.
35. A composition according to claim 34 wherein the ion pair forming compound is a cholesterol analog or a mixture of cholesterol analogs.

36. A composition according to claim 35 wherein the ion pair forming compound is selected from cholesterol sulfate, cholesterol hemisuccinate, cholesterol succinate and mixtures thereof.
37. A composition according to claim 34 wherein the ion pair forming compound is a phospholipid or a mixture of phospholipids.
38. A composition according to claim 37 wherein the ion pair forming compound is selected from phosphatidic acid, phosphatidylserine, phosphatidylinositol, phosphatidylglycerol and diphosphatidylglycerol, and mixtures thereof.
39. A composition according to claim 34 wherein the ion pair forming compound is a sphingolipid or mixture of sphingolipids.
40. A composition according to claim 39 wherein the ion pair forming compound is selected from sphingosine, phosphatide analogs of sphingosine, and mixtures thereof.
41. A composition according to claim 39 wherein the ion pair forming compound is sphingomyelin.
42. A composition according to claim 1 wherein the pharmaceutically active compound is cationic and the ion pair forming compound is anionic.
43. A composition according to claim 42 wherein the ion pair forming compound is a succinate or phosphate derivative of a tocopherol.
44. A composition according to claim 42 wherein the pharmaceutically active compound is selected from erythromycin, clarithromycin, amiodarone, doxorubicin and cationic analogs thereof.

45. A composition according to claim 43 wherein the ion pair forming compound is selected from tocopherol succinate, tocopherol phosphate and mixtures thereof.
46. A composition according to claim 1 wherein the pharmaceutically active compound is anionic and the ion pair forming compound is cationic.
47. A composition according to claim 46 wherein the pharmaceutically active compound is a peptide, peptide mimetic, polypeptide, nucleotide or polynucleotide.
48. A composition according to claim 46 wherein the ion pair forming compound is tocopheramine, stearylamine, or sphingomyelin.
49. A composition according claim 1 in the form of a multiphase system.
50. A biphasic composition according to claim 49.
51. A composition according to claim 49 in the form of an emulsion or microemulsion.
52. A composition according to claim 49 comprising micelles, mixed micelles, reverse micelles, liposomes, niosomes and mixtures thereof.
53. A composition according to claim 49 comprising an oil-in-water or water-in-oil emulsion or microemulsion.
54. A composition according to claim 49 comprising an oil-in-water-in oil or water-in-oil-in-water emulsion or microemulsion.
55. A composition according to claim 49 further comprising one or more surfactants, one or more co-solvents and one or more aqueous phases.

56. A composition according to claim 1 in the form of a self-emulsifying drug delivery system.
57. A process for solubilizing in an oil phase a charged pharmaceutically active compound or a charged precursor thereof comprising combining the pharmaceutically active compound or precursor with an oppositely charged compound capable of forming a tocol-soluble ion pair with the pharmaceutically active compound or precursor, and with a tocol as a solvent for the ion pair.
58. A process according to claim 57 in which the oil phase is an oil phase of a multiphase system.
59. Tocopherolsuccinate-aspartate.
60. Tocopherolsuccinate-glutamate.
61. A composition according to claim 1 wherein the ion pair forming compound is tocopherolsuccinate-aspartate.
62. A composition according to claim 1 wherein the ion pair forming compound is tocopherolsuccinate-glutamate.
63. Pharmaceutical use of compositions of Claim 1 by administration to an animal or human.